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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/585,568 | 10/16/2008 | Jurgen Kunstmann | 187857/US-479686-00018 | 7929 |
| 30873 7590 05/11/2011 DORSEY & WHITNEY LLP - NEW YORK (PT/18) ATTENTION: INTELLECUAL PROPERTY/PATENT DEPARTMENT 250 PARK AVENUE NEW YORK, NY 10177-1500 | | | EXAMINER TADESSE, YEWEBDAR T | |
| | | | ART UNIT 1717 | PAPER NUMBER |
| | | | NOTIFICATION DATE 05/11/2011 | DELIVERY MODE ELECTRONIC |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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| | | | |
|------------------------------|--|---|--|
| Office Action Summary | Application No. 10/585,568 | Applicant(s) KUNSTMANN ET AL. | |
| | Examiner YEWEBDAR T. TADESSE | Art Unit 1717 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 38-58 is/are pending in the application.
4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 38-51 and 53-58 is/are rejected.
- 7) ☒ Claim(s) 52 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 July 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date <u>7/5/06</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 38-49, 51 and 53-58 are rejected under 35 U.S.C. 102(b) as being anticipated by Singh et al (US 6,569,249).

As to claims 38 and 49, Singh et al discloses (see Figs 1-2 and 6) a high-frequency atomizing device, comprising: an atomizing arrangement (see Fig 1) configured to provide a spray mist jet and comprising a horn-shaped resonance body that is excitable to generate high-frequency vibrations; a housing (16) comprising at least one opening, wherein the particular housing is configured to enclose at least one portion of the atomizing arrangement and wherein the resonance body is provided proximate to the at least one opening; a nozzle (14) connected to the at least one opening; a controllable gas supply arrangement (27) configured to provide a flow of a gas to the housing, a substrate holder arrangement (19) configured to maintain a substrate in a particular position and at least one drying arrangement (24, 26 and 28) configured to at least one of dry or cure a spray mist coating applied to the substrate.

With respect to claim 39, Singh et al teaches a movable substrate (see column 7, lines 1-5), so the atomizing arrangement is capable of moving relative to the substrate.

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With respect to claim 40, Singh et al teaches a storage tank (10) for a coating fluid.

Regarding claims 41-43, 46, 47 and 57-58, Singh et al discloses (see Figs 2 and 6 and column 10, lines 53-67) a temperature setting arrangement or a processing arrangement (30, 32) capable of being in thermal communication with the atomizing arrangement (14), the storage tank, the gas supply arrangement, or the substrate holder or configured to control at least the atomizing arrangement, the storage tank, the gas supply arrangement, or the substrate holder; or affecting the temperature of the gas or the chamber.

As to claims 44-45, Singh et al discloses an electric/magnetic field (50) in a region between the atomizing arrangement and the substrate holder (see Fig 5)

With respect to claim 48, in Singh et al, the nozzle is configured to pass a gas therethrough (see Fig 1 for the nozzle 14 connected to the gas reservoir 20).

As to claims 51 and 53, Singh et al discloses an infrared heat source.

As to claim 54, Singh et al discloses a controllable suction arrangement (vacuum means 23) for the chamber.

With respect to claims 55-56, Singh et al discloses (see Fig 2) a housing that surrounds the suction arrangement (vacuum line 23) and another housing surrounding the at least one drying arrangement (28).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 38, 40, 41-43, 46-49, 51, 53-58 are rejected over U.S.C. 103(a) as being unpatentable over Leiby et al (US 2003/0161937 A1) in view of Versteeg et al (US 5,451,260) or Kirkpatrick et al (US 2002/0051846).

6. As to claims 38 and 49, Leiby et al discloses (see Figs 1 and 3) a high-frequency atomizing device, comprising: an atomizing arrangement configured to provide a spray mist jet and comprising a horn-shaped resonance body (20) that is excitable to generate high-frequency vibrations; a housing (10) comprising at least one opening, wherein the

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particular housing is configured to enclose at least one portion of the atomizing arrangement and wherein the resonance body is provided proximate to the at least one opening; a nozzle (28) connected to the at least one opening; a controllable gas supply arrangement (16) configured to provide a flow of a gas to the housing and at least one drying arrangement (17; see paragraph 26 and claim 2) configured to at least one of dry or cure a spray mist coating applied to the substrate. Leiby et al further teaches a substrate within a chamber but lacks specifically showing a substrate holder arrangement configured to maintain a substrate in a particular position. However, a substrate holder configured to hold a substrate within a housing a chamber is known in the art; for instance as taught by Versteeg et al (see item 14 on Fig 1) and Kirkpatrick et al (see workpiece holder 150 holding a substrate 10). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a substrate holder configured to hold a substrate in Leiby et al to appropriately position the substrate for treatment with the coating material.

With respect to claim 40, Leiby et al lacks teaching a storage tank for a coating fluid; however the use of storage tank is taught by Versteeg et al (see Fig 1 for item 24). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a storage tank in Leiby et al to supply the coating material.

Regarding claims 41-43, 46, 47 and 57-58, Leiby et al discloses temperature and pressure controlled enclosed volume of the chamber (see paragraph 10) however, a temperature setting arrangement or a processing arrangement configured to be in thermal communication with the atomizing arrangement, the storage tank, the gas

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supply arrangement, or the substrate holder or configured to control at least the atomizing arrangement, the storage tank, the gas supply arrangement, or the substrate holder; or affecting the temperature of the gas or the chamber is not specifically taught by Leiby et al. Yet, Versteeg et al discloses (see Fig 1) a microprocessor controlling the overall operation of the system including the liquid delivery system, controlling the temperature of the substrate, in communication with the storage tank, the nozzle, the substrate. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a temperature setting arrangement or a processing arrangement as claimed in Leiby et al to achieve uniform deposition of film as taught by Versteeg et al (see Abstract).

With respect to claim 48, in Leiby et al, the nozzle is configured to pass a gas therethrough.

As to claims 51 and 53, Leiby et al lacks teaching a drying arrangement comprising an infrared source. Versteeg et al discloses an infrared heat source. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include an infrared heat source in Leiby et al to heat the substrate at desired temperature.

As to claim 54, Leiby et al a vacuum means 17 for purging the chamber. The suction (vacuum) arrangement is capable of being controlled. In any event, Versteeg et al discloses a controlled vacuum pump. It would have been obvious to one of ordinary skill in the art at the time the invention was made to control suction arrangement in

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Leiby et al to achieve uniform deposition of film as taught by Versteeg et al (see Abstract).

With respect to claim 55, Leiby et al discloses housing (34) surrounding the atomizing arrangement.

As to claim 56, Leiby lacks teaching the at least one housing surrounding the at least one drying arrangement. Versteeg et al discloses a housing (18) surrounding the drying arrangement (19). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a housing to enclose the drying arrangement.

7. Claim 50 is rejected under 35 U.S.C. 103(a) as being unpatentable over Singh et al (US 6,569,249) in view of Ono et al (US 6,927,838).

Singh et al discloses a substrate support (19). However a substrate support arrangement capable of moving the substrate using six different degrees of freedom movement is not taught in Singh et al. However, a substrate holder arrangement moving the substrate using six different degrees of freedom is known in the art for instance as taught by Ono et al (see table component 54 with six degrees freedom). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a substrate support arrangement with six degrees freedom to improve positioning performance of the substrate holder arrangement or stage as taught by Ono et al (see Abstract).

Allowable Subject Matter

8. Claim 52 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. The following is a statement of reasons for the indication of allowable subject matter: prior art of record does not disclose or suggest a high-frequency atomizing device further comprising a heating housing that includes at least one drying arrangement comprising a heating housing that includes at least one heating opening which is open on one side thereof, and wherein the heating housing is in a communication with the controllable gas supply arrangement and configured to provide a flow of a heated gas therethrough.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to YEWEBDAR T. TADESSE whose telephone number is (571)272-1238. The examiner can normally be reached on Monday-Friday 8:00 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dah-Wei Yuan can be reached on (571) 272-1295. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Yewebdar T Tadesse/
Primary Examiner, Art Unit 1717